



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,103	03/28/2001	Takahiro Hayashi	33388	5430
116	7590	09/23/2005	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			FOX, BRYAN J	
			ART UNIT	PAPER NUMBER
			2686	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/806,103	Applicant(s) HAYASHI ET AL.	
	Examiner Bryan J. Fox	Art Unit 2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____                                                             | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama (US005493604A) in view of Azartash, et al. (WO9921343A1) and further in view of Takahashi (JP411027352A) and Takagi.

Regarding **claim 1**, Hirayama discloses a foldable mobile telephone with a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section" (see column 2, lines 18-20 and figure 1). The antenna 11 (see figure 1A) that connects the phone wirelessly to a base station reads on the claimed "I/O connector section". The receiving section 1 also includes an antenna 11 (see column 2, lines 21-22 and figure 1), which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 (see column 2, lines 26-28 and figure 1), which read on the claimed "operation section", a battery 26 (see column 2, lines 30-31 and figure 1), which read on the claimed "battery" and ten keys 21 (see column 2, lines 52-54 and figure 1) which read on the claimed "keyboard". The components in the

calling section are mounted on the keyboard. Hirayama does not disclose a vibration section located in the upper casing.

In a similar field of endeavor, Azartash, et al. discloses a Portable Telephone with a vibrator in the upper casing of the phone as described on page 3, lines 21-22, which reads on the claimed "vibrator section" located on the upper part of the telephone.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the above vibrator to Hirayama in order to silently alert users of a phone call. The combination of Azartash et al. and Hirayama fails to expressly disclose including a control processing section in the upper portion of the telephone.

In a similar field of endeavor, Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama and Azartash et al. with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract). The combination of Hirayama, Azartash et al and Takahashi fails to disclose that the key board is a flexible board.

In a similar field of endeavor, Takagi et al. discloses a portable telephone with a flexible printed circuit board 8 that is a keyboard (see column 3, lines 27-37).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include the above flexible keyboard in order to aid in manufacturability

and increase portability. The resultant phone is foldable (see Hirayama figures 1a and 1b), which reads on the claimed, "a battery terminal, a microphone, a key diaphragm, and a LED for keys are all mounted on portions of one surface of the flexible board and said portions are folded or turned down before storing in the lower case."

Regarding **claim 6**, the above combination of Hirayama, Azartash et al, Takahashi and Takagi fails to disclose a viewport.

In a similar field of endeavor, Azartash, et al. discloses a foldable telephone where the display is seen through the viewing window 44 in the folded state on the lower case 36 (see figure 5), which reads on the claimed "view port."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the above combination of Hirayama, Azartash, Takahashi and Takagi to include the above viewing window as taught by Azartash, et al., in order to allow the use of the display for such functions as caller ID while in the folded state.

Regarding **claim 7**, as applied to claim 6 above, the combination of Hirayama, Azartash et al, Takahashi and Takagi discloses a viewing window 44 disclosed by (see Azartash figure 5), which reads on the claimed "view port" is positioned between the microphone 40 and the keypad 32 which reads on the claimed "key operation section."

Regarding **claim 8**, as applied to claim 7 above, the combination of Hirayama, Azartash et al, Takahashi and Takagi further discloses a transparent or clear window 44 or 12 (see Azartash et al. page 1, lines 32-34).

Regarding claim 9, the combination of Hirayama, Azartash et al, Takahashi and Takagi fails to disclose the use of a lens function in the transparent window.

In a similar field of endeavor, Azartash et al disclose a transparent window 12 with a magnifying lens (see Azartash et al. page 1, line 38 and page 2, lines 1-2), which reads on the claimed "lens function".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al, Takahashi and Takagi with Azartash et al to include the above magnifying lens in order to allow a user to better see the display.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hirayama, Azartash et al, Takahashi and Takagi as applied to claim 1 above, and further in view of Morgenthaler (US006310609B1).

Regarding **claim 2**, as applied to claim 1 above, the above combination of Hirayama, Azartash et al, Takahashi and Takagi discloses a display 13 that is a liquid crystal display (see Hirayama column 2, line 23), which reads on the claimed "liquid crystal display", located in the receiving section 1 which reads on the claimed "upper case". The combination of Hirayama, Azartash et al. and Takahashi also discloses buttons below the display (see Azartash et al. figure2), however it is not expressly disclosed that the buttons are used for navigating a menu.

In a similar field of endeavor, Morgenthaler discloses a mobile phone with three keys 136,138 and 140 to allow the user to move through the complicated menu scheme by pressing soft key 140 to select the menu, then moving the cursor 130 within that

menu using the indexing key 136 and selecting a particular menu entry by pressing the other soft key 138 (see column 1, line 66 – column 2, line 5 and figure 1).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al, Takahashi and Takagi with Morgenthaler to include the above menu navigation in order to make the device more user friendly.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash et al, Takahashi and Takagi as applied to claim 11 above, and further in view of The Hitachi document.

Regarding **claim 3**, the combination of Hirayama, Azartash et al, Takahashi and Takagi, et al. does not disclose that the flexible keyboard be used as a connecting board between upper and lower phone portions.

In a similar field of endeavor, the Hitachi document discloses a folding telephone with a flexible printed circuit board assembly connecting the transmitter, which reads on the claimed “upper casing”, and receiver, which reads on the claimed “lower casing” (see abstract).

It would be obvious to one skilled in the art to modify the combination of Hirayama, Azartash et al, Takahashi and Takagi, et al. to extend the flexible keyboard into a connecting board in the application of a folding mobile telephone as taught by the Hitachi document, in order to conserve space and create a more flexible folding telephone. The resultant flexible keyboard/connecting board would read on the claimed

“keyboard arranged and accommodated in the lower case is a flexible board” and “the flexible board shares its use as a connecting board”.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al, Takahashi and Takagi as applied to claim 1 above, and further in view of Kubo.

Regarding **claim 5**, the combination of Hirayama, Azartash, et al, Takahashi and Takagi fails to disclose an inclined microphone.

In a similar field of endeavor, Kubo discloses a portable telephone with a microphone 14 that is inclined as can be seen in figure 1.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to one skilled in the art to modify the combination of Hirayama, Azartash, et al, Takahashi and Takagi as applied to claim 1 to include the above inclined microphone disclosed in Kubo, in order to bring the microphone closer to the mouth when in use and improve the sound input into the microphone.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al, Takahashi and Takagi as applied to claim 1 above, and further in view of Roloff (DE019723338A1).

Regarding **claim 10**, the combination of Hirayama, Azartash et al, Takahashi and Takagi fails to include a narrowing of the phone casing in the vicinity of the portion connecting upper and lower casings.



In a similar field of endeavor, Roloff discloses an inflatable handset 14 that is narrower in the center (see figure 1).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash, et al. and Takahashi to include the above narrowing of the handset in the vicinity of the connection of upper and lower boards as taught by Roloff, in order to conform better to the grip of a hand.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al. and further in view of Tamura, Takahashi and Takagi.

Regarding **claim 11**, Hirayama discloses a portable telephone that folds which reads on the claimed "foldable mobile communication terminal". Hirayama also discloses a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section". The receiving section 1 includes volume adjust buttons 14 and a display 13 which reads on the claimed "display"; the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section". Hirayama also discloses an antenna 11, which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 which read on the claimed "operation section", a battery 26 which read on the claimed "battery" and ten keys 21 which read on the claimed "keyboard". The components in

the calling section are mounted on the keyboard. Hirayama fails to disclose the location of a vibration section or I/O connector.

In a similar field of endeavor, Weissshappel, et al. discloses a portable electronic device with an external connector 304 which, as described in column 5, lines 21-23, may be used to couple the portable radiotelephone to a hands free user interface, thus requiring input and output and reading on the claimed "I/O connector". Furthermore the external connector is located on the lower portion of the foldable phone.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Hirayama with Weissshappel et al to add an external connector to the phone in order to allow use of a hands free user interface. The combination of Hirayama and Weissshappel, et al. fails to disclose a vibration section located in the lower casing.

In a similar field of endeavor, Tamura discloses a portable telephone with a vibrator 7, which reads on the claimed "vibrator section" located on the lower part of the folding telephone (see abstract and figure a).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama and Weissshappel et al to include the above vibrator 7 as taught by Tamura in order to silently alert users of incoming calls. The combination of Hirayama, Weissshappel et al. and Tamura fails to teach the inclusion of a control processing section in the upper section.

In a similar field of endeavor, Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weissshappel et al. and Tamura with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract). The combination of Hirayama, Weissshappel et al and Takahashi fails to disclose that the key board is a flexible board.

In a similar field of endeavor, Takagi et al. discloses a portable telephone with a flexible printed circuit board 8 that is a keyboard (see column 3, lines 27-37).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weissshappel et al, Tamura and Takahashi to include the above flexible keyboard as taught by Takagi in order to aid in manufacturability and increase portability. The resultant phone is foldable (see Hirayama figures 1a and 1b), which reads on the claimed, "a battery terminal, a microphone, a key diaphragm, and a LED for keys are all mounted a same surface of the flexible board and folded or turned down before storing in the lower case."

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al, Tamura, Takahashi and Takagi as applied to claim 11 above, and further in view of The Hitachi document.

Regarding **claim 12**, the combination of Hirayama, Weissshappel, et al, Tamura, Takahashi and Takagi, et al. does not disclose that the flexible keyboard be used as a connecting board between upper and lower phone portions.

In a similar field of endeavor, the Hitachi document discloses a folding telephone with a flexible printed circuit board assembly connecting the transmitter, which reads on the claimed "upper casing", and receiver, which reads on the claimed "lower casing" (see abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weissshappel, et al., Tamura, Takahashi and Takagi, et al. to extend the flexible keyboard into a connecting board in the application of a folding mobile telephone as taught by the Hitachi document, in order to conserve space and create a more flexible folding telephone. The resultant flexible keyboard/connecting board would read on the claimed "keyboard arranged and accommodated in the lower case is a flexible board" and "the flexible board shares its use as a connecting board".

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al, Tamura, Takahashi and Takagi as applied to claim 11 above, and further in view of Roloff.

Regarding **claim 14**, the combination of Hirayama, Weissshappel, et al, Tamura, Takahashi and Takagi fails to disclose a narrowing of the phone casing in the vicinity of the portion connecting upper and lower casings.

In a similar field of endeavor, Roloff discloses an inflatable handset 14 that is narrower in the center as can be seen in figure 1.

It would be obvious to one skilled in the art at the time of the invention to modify the combination of Hirayama, Weissshappel, et al, Tamura, Takahashi and Takagi with Roloff to include the above narrowing of the handset in order to conform better to the grip of a hand.

### ***Response to Arguments***

Applicant's arguments filed July 28, 2005 have been fully considered but they are not persuasive.

The examiner believes that the claim language "folded or turned down before storing in the lower case," reads on the foldable telephone disclosed by Hirayama, as described above in the rejections of claims 1 and 11.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J. Fox whose telephone number is (571) 272-7908. The examiner can normally be reached on Monday through Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Marsha D Banks-Harold*  
MARSHA D. BANKS-HAROLD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

Bryan Fox  
September 19, 2005